

## A NEW SPECIES OF *COTINIS* (*COTINIS*) (COLEOPTERA: MELOLONTHIDAE) AND A KEY FOR THE IDENTIFICATION OF MEXICAN SPECIES<sup>1</sup>

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**ABSTRACT:** *Cotinis (Cotinis) sinitoc*, new species, from northwestern Mexico, is described and illustrated. Some comments about its relation with *C. pokorny*, as well as an identification key for the 16 species of the subgenus *Cotinis* known to date in Mexico are presented.

The subgenus *Cotinis* is the most speciously diverse group in the genus *Cotinis* Burmeister with 21 species, of which 15 occur in Mexico (Goodrich, 1966; Deloya & Ratcliffe, 1988; Deloya, 1995; Delgado, 1988). Of the 15 species, *C. pueblensis* Bates, *C. pauperula* Burmeister, *C. pokorny* Deloya, *C. rufipennis* Bates, *C. laticornis* Bates, *C. sphyracera* Deloya & Ratcliffe, *C. antonii* Duges, *C. orientalis* Deloya & Ratcliffe, *C. subviolacea* Gory & Percheron, and *C. beraudi* Delgado, and the new species, are endemic of Mexico.

### *Cotinis sinitoc* Deloya, Ibáñez-Bernal & Nogueira, NEW SPECIES

(Fig. 1-6)

**Holotype.** Male. Length from apex of pronotum to apex of elytra: 16.4 mm; humeral width: 9.6 mm. Dorsum velvety, venter shiny. Dorsal coloration: head bright green, pronotum ashy-brown with some green reflections, elytra ashy-brown, each with two longitudinal green vittae.

Head (Fig. 1, 2). Frontal projection fused, occupying 72% of length from vertex to clypeus, tapered apically; surface with subrugate punctures and long, thin, yellowish setae. Clypeus with trapezoidal laminar projection, anterior margin bisinuate in dorsal view and straight-angulate from disc level in lateral view.

Thorax: Pronotum with a shallow median longitudinal impression; punctures of median size, distinctly separate and irregularly spaced; with coarse punctures moderately separated and with short yellowish setae at each side of pronotum; anterior and lateral surfaces shiny, basal part of disc opaque; lateral margins shiny and strongly marked; base without marginal line; mesoepimera with ventral region substrigulose, with long and thin setae, dorsal region smooth and punctate. Elytra with two slightly marked longitudinal costae converging at apical callus; with very small punctures well separated and with short setae; large, coarse C-shaped punctures irregularly disposed over apical third between elytral suture and inner costae; lateral margins shiny. Ventral region: Mesosternal projection with semi-rounded apex, parallel to body plane (Fig. 3). Metasternum with longitudinal line and small punctures at each side; central surface with punctures of moderate size, with yellow setae, punctures distinctly separate, lateral region substrigose, with large yellowish setae. Protibia tridentate, basal tooth short (Fig. 4). Abdominal sternites with long setae laterally.

Pigidium: Surface strigose with moderately separated short, yellow setae on disc; apex margined with short yellowish setae.

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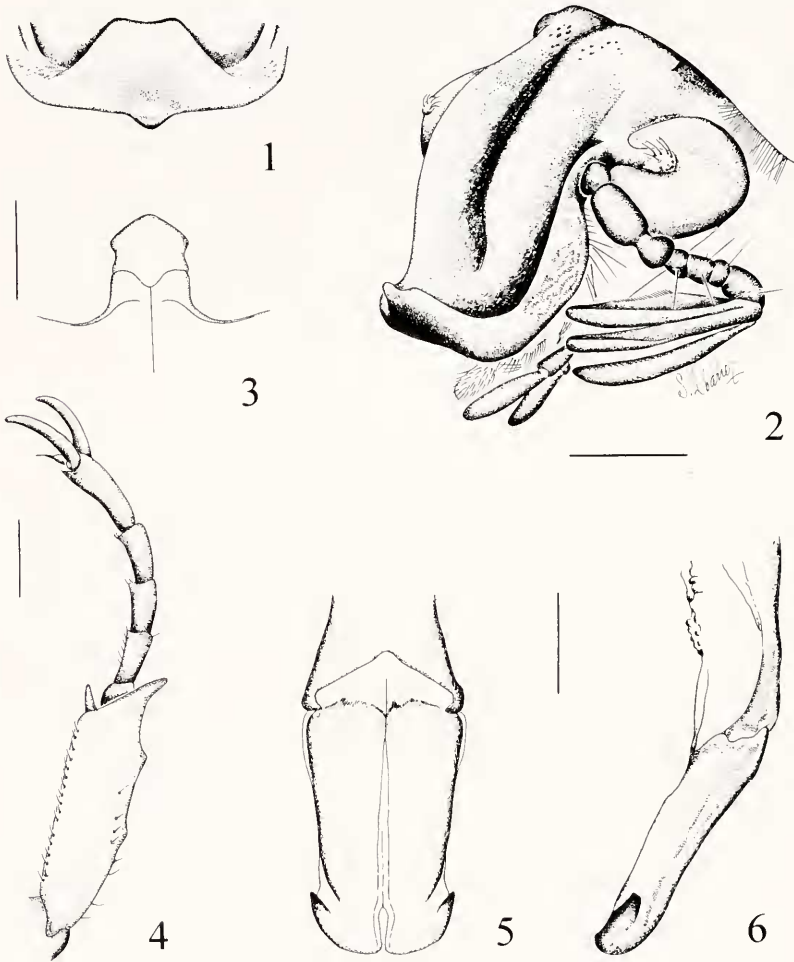


Fig. 1-6. *Cotinis sinitoc* new species (Holotype ♂). 1) Clypeus, frontal view; 2) Head, fronto-lateral view; 3) Mesosternum; 4) Protibia and tarsi, dorsal view; 5) Genitalia, dorsal view; 6) Genitalia, lateral view. Scale = 1 mm.

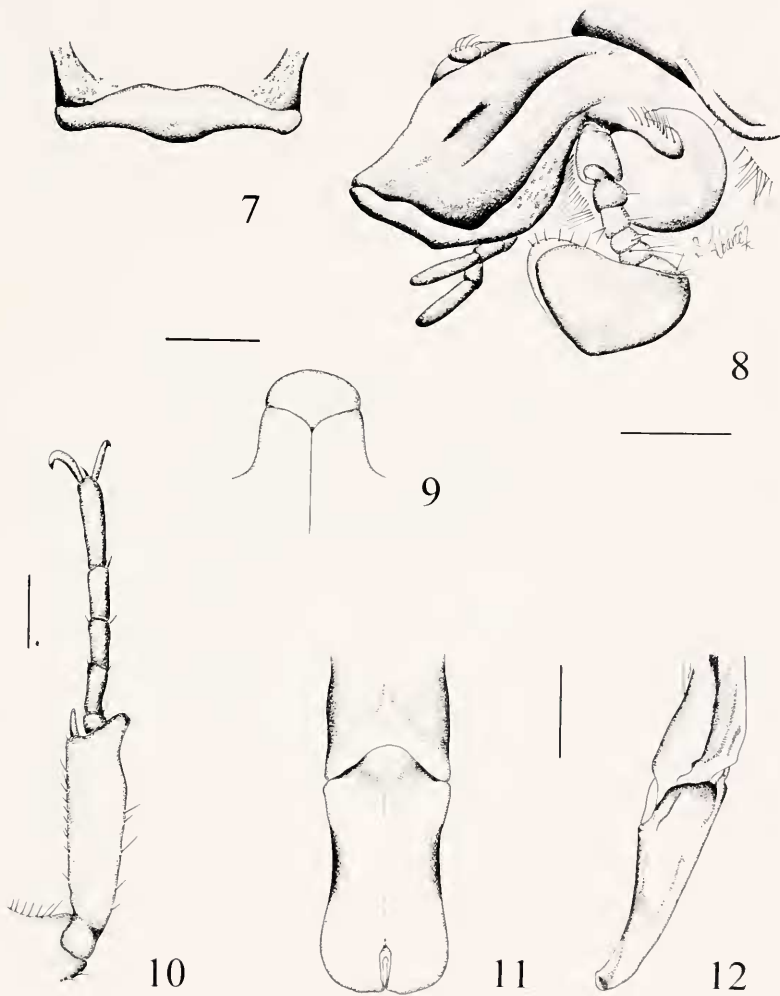


Fig. 7-12. *Cotinis pokornyi* Deloya (Paratype ♂). 7) Clypeus, frontal view; 8) Head, fronto-lateral view; 9) Mesosternum; 10) Protibia and tarsi, dorsal view; 11) Genitalia, dorsal view; 12) Genitalia, lateral view. Scale = 1 mm.

Genitalia (Fig. 5, 6). Parameres elongate, rectangular, 82% of length fused, convex, expanded latero-apically; anterocentral margins not curved ventrally, with antero-lateral projections.

**Allotype.** Female. Similar to male, except for the following characteristics: length from apex of pronotum to apex of elytra: 17.9 mm; humeral width: 11.1 mm. Clypeus with a trapezoidal laminar projection with anterior margin straight. Elytra without large, coarse, C-shaped punctures over apical third between elytral suture and internal costae; mesosternal projection with rounded apex.

**Variation in paratypes.** The five paratypes (one male, three females, one not sexed) are similar to the holotype and allotype, differing only as follows: length from apex of pronotum to apex of elytra varies from 14.7 and 18.4 mm; humeral width varies from 8.8 to 11.2 mm; and the clypeal laminar projection may be small and short.

**Type locality.** Rosario de Tezopaco, state of Sonora, Mexico (approx. 27° 48' N; 109° 26' W).

**Type material.** Holotype ♂, allotype ♀, and 5 paratypes. Holotype ♂, allotype ♀, paratypes (1♂, 1♀) labeled: "MEXICO, Sonora, Rosario de Tezopaco, 30-VII-98, 470 m. G. Nogueira, col"; 2♀ paratypes with same data, except date "30-VIII.98". One paratype (not sexed) labeled "Mexico, Sonora, Cocorit, 22-VII.1966, T. De la Rosa, col". The holotype, allotype, and one female paratype deposited in Entomological Collection of Instituto de Ecología, A.C. (IEXA), one male and one female paratypes will be deposited in "Instituto de Biología, Universidad Nacional Autónoma de México (IBUNAM)", one paratype in H. & A. Howden collection (HAHC), and the other female paratypes in the particular collections of Guillermo Nogueira (GN), Miguel Angel Morón (MXAL) and Cuauhtémoc Deloya (CD).

**Etymology.** The specific name *C. sinitoc* is the anagram of the generic name *Cotinis*.

**Remarks.** *Cotinis sinitoc* is related to *C. pokorny*, both having the same form of frontal and clypeal projections, having the frontal projection a little elevated and not visible in lateral view (cf. figs 1-2 vs. 7-8), pronotum with the lateral margins arcuate, and by the general form of the parameres. Differ by the ashy-brown with green reflections coloration of pronotum and elytra, and the presence of two green vittae in each elytron in *C. sinitoc*, whereas the coloration is blackish-green in the same structures of *C. pokorny*. The clypeal projection is trapezoidal in *Cotinis sinitoc* and semitrapezoidal in *C. pokorny* (Fig. 7). *C. sinitoc* has the pronotum with smaller punctuation and the basal lobe rounded, whereas in *C. pokorny* the punctuation is larger and the lateral lobe sinuate. *C. sinitoc* has the dorsal surface of mesepimeron with separate punctures and long setae, whereas *C. pokorny* has the dorsal surface of mesepimeron with tight punctures and long setae. The elytra are smooth with fine punctuation only visible at great magnification in *C. sinitoc* and punctate-striate in *C. pokorny*. The mesosternal projection is semi-rounded with angulate apex in *C. sinitoc* (Fig. 3) and slightly rounded in *C. pokorny* (Fig. 9). The parameres have antero-lateral projections in *C. sinitoc* (figs 5-6), absent in *C. pokorny* (figs. 11-12). Finally, the protibia is tridentate with short basal tooth in *C. sinitoc* (Fig. 4), whereas it is bidentate with the basal tooth difficult to see in *C. pokorny* (fig. 10).

*Cotinis sinitoc* lives in a thorn forest with xerophitic brush-wood species: *Prosopis*, *Parkinsonia*, *Cercidium*, *Acacia*, *Larrea*, *Celtis*, *Ferocactus* and numerous perennial herbaceous plants. The soil has a high clay content.

One male and two females were attracted to light traps (ultraviolet light with and without filters, mercury vapor lamps, and lamps of mercury vapor with metallic additives) between 20:00-22:00 hours (summer Pacific time). Additionally, one male and one female were obtained with traps baited with fermented banana and pineapple, placed at 1 m above ground. Another female specimen was collected in flight around thorny plants at 18:00 hours.

In life, the specimens show an iridescent green coloration with bright yellowish-orange stripes over the pronotum and elytra, which are lost when killed with ethyl acetate.

*C. sinitoc* apparently has crepuscular or nocturnal habits, as does *C. orientalis* Deloya & Ratcliffe, 1988; both have been captured at light traps.

### Key to the known Mexican species of *Cotinis* (*Cotinis*).

(Modified from Deloya & Ratcliffe, 1988)

1. Dorsum opaque, velvety or pruinose-like; venter shiny ..... 2
- 1'. Dorsum and venter shiny, smooth (in *C. antonii* dorsal surface is not smooth) ..... 12
2. Frontal projection partially free, never fused. Clypeal projection large ..... 8
- 2'. Frontal projection fused. Clypeal projection large or reduced. .... 3
3. Clypeal projection pronounced. Elytra punctate ..... 4
- 3'. Clypeal projection reduced. Elytra smooth. .... 7
4. Frontal projection short, no more than 50% of length from vertex to apex of clypeus ..... *C. pueblensis* Bates
- 4'. Frontal projection long, at least 55% of length from vertex to clypeal apex ..... 5
5. Clypeal projection triangular. .... *C. pauperula* Burmeister
- 5'. Clypeal projection semitrapezoidal or trapezoidal ..... 6
6. Clypeal projection semitrapezoidal. Pronotum and elytra blackish-green, elytra punctate-striate ..... *C. pokorny* Deloya
- 6'. Clypeal projection trapezoidal. Pronotum ashy-brown with green reflections; each elytron with two green vittae *C. sinitoc*, n. sp. Deloya, Ibáñez-Bernal & Nogueira
7. Frontal projection long, at least 60% of length from vertex to clypeal apex, extending beneath antennal insertion. .... *C. impia* (Fall)
- 7'. Frontal projection short, no more than 50% of length from vertex to clypeal apex ..... *C. rufipennis* Bates
8. Clypeal projection narrow, less than 0.5 mm thick in lateral view ..... 9
- 8'. Clypeal projection distinctly thickened, greater than 0.5 mm in lateral view ..... 11
9. Elytra punctate-striate, punctures C-shaped ..... *C. punctatostriata* Bates
- 9'. Elytra not punctate-striate ..... 10
10. Clypeal projection in form of inverted triangle, apically expanded. Dorsal coloration opaque dark green with blue luster reflections, rest of body bright blue-green ..... *C. beraudi* Delgado
- 10'. Clypeal projection variable, i.e., quadrate, rectangular, triangular or only a little expanded apically. Dorsal coloration variable, green, black or red ..... *C. mutabilis* (Gory & Percheron)

11. Frontal projection with apex pointed in dorsal view. Clypeal projection expanded apically ..... *C. laticornis* Bates
- 11'. Frontal projection with apex abruptly expanded and rounded. Clypeal projection semicircular. Surface of clypeus with longitudinal ridge between two depressions. Frons with depression either side of frontal projection ..... *C. sphyracera* Deloya & Ratcliffe
12. Frontal projection completely fused, short, not reaching antennal insertion. Clypeal projection reduced to two lobes. Elytra punctate-striate ..... *C. antonii* Duges
- 12'. Frontal projection partially free, extending beyond insertion of antenna. Clypeal projection variable. .... 13
13. Metasternum with long setae, greater than 0.5 mm in length. Clypeal projection obtusely angled from plane of clypeal disc in lateral view ..... *C. orientalis* Deloya & Ratcliffe
- 13'. Metasternum with short setae, less than 0.5 mm long. Clypeal projection obtusely or right angled from plane of clypeal disc in lateral view ..... 14
14. Clypeal projection right-angled from plane of disc in lateral view. Elytra with two well-developed costae ..... *C. viridiacyanea* (Perbosc)
- 14'. Clypeal projection obtusely angled from plane of disc in lateral view. Elytra lacking costae ..... 15
15. Color brownish black or deep plum. Internal sac of male genitalia with large teeth, greater than 0.5 mm in length ..... *C. fuscopicea* Goodrich
- 15'. Color variable, blue to bluish green to purplish. Internal sac of male genitalia with small teeth, less than 0.5 mm. ... *C. subviolacea* Gory & Percheron

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